RADIOCHEMISTRY TECHNICIAN QUALIFICATION CARD TRC-01 Rev 0

CANDIDATE: _____ COMPANY/DEPT.: _____

SSN.#: _____ DATE STARTED: _____

APPROVAL: This Qualification Card is approved for use.

_____

Cognizant Manager Date

FORMAT: This Qualification Card has been reviewed and meets format requirements in effect.

_____

Training Manager Date

SCOPE:

This Qualification Card states and defines the knowledge and skills requirements necessary for successful completion of the WIPP Radiochemistry Technician Training Program. The Qualification Card is divided into three phases:

PHASE I: RADIOCHEMISTRY TECHNICIAN ACADEMICS TRAINING

- There are 13 lessons associated with the Basic Chemistry Fundamentals training course, 9 lessons associated with the Laboratory Skills Fundamentals training course, and 11 lessons associated with the Radiochemistry Fundamentals training course. Each lesson is "Self-paced" and the responsible instructor should sign the appropriate blocks upon successful completion of the examination for that lesson or group of lessons as indicated by scoring a minimum of 80%.

PHASE II: RADIOCHEMISTRY TECHNICIAN PRACTICAL TRAINING (JPMs)

- There are four duty areas containing Radiochemistry Technician tasks evaluated by Job Performance Measures (JPMs) associated with the practical program. The JPM Evaluator responsible for the duty area and task should sign the appropriate block upon successful completion of the JPM. Next to each JPM listed, there is a letter indicating the method of accomplishment of that JPM.
- There are three possible methods of accomplishment as listed by letter and description below. When both methods of accomplishment are available, as indicated by a P,S,D, try to accomplish the P

method first. If this is not possible, accomplish the S method, then finally the D method. In any case, circle the letter indicating the method used.

P Perform the specified task using procedures and observing all applicable safety and administrative requirements. This includes a thorough discussion (usually prior to performing the task) addressing safety implications, elements involved, the effects on associated equipment or systems, and abnormal situations that may arise while performing the task. This method of accomplishment is the most desirable level for performance testing.

S Simulate performance of the specified task. Using approved procedures, "walk through" the task and simulate all actual manipulations (valves, switches, tools, etc.) an employee would perform. Describe applicable safety and administrative requirements and the parameters (meter readings, charts, measurements, etc.) an employee would observe/monitor during actual performance of the task. Conduct the same discussion as required for a perform signature.

D Discuss the performance of the specified task. Using approved procedures, discuss the task including all actual manipulations (valves, switches, tools, etc.) an employee would perform. Describe applicable safety and administrative requirements and the parameters (meter readings, charts, measurements, etc.) an employee would observe/monitor during actual performance of the task. Conduct the same discussion as required for a perform signature.

PHASE III: ORAL EXAMINATION BOARD

- The oral board consists of members of Radiochemistry and Technical Training and will assess the candidate's response to normal and emergency situations encountered by a Radiochemistry Technician. The chairperson of the board and each board member should sign the appropriate blanks upon successful completion of the oral examination board.

This Qualification Card will normally be retained by the trainee until completed. When completed, it must be routed to Training for review, approval, and retention. This Qualification is valid for two years.

References:
1. WP 12-5, WIPP Radiological Controls Manual
2. WP 12-RL, WIPP Radiochemistry Procedures Manual
3. WP 12-HP, WIPP Operational Radiological Controls Procedures Manual

Prior to final Radiochemistry Technician Qualification, the trainee shall have completed the following prerequisite training (or its refresher, as applicable) as indicated by satisfactorily passing quizzes or examinations based on the objectives associated with each of the classes specified on the Qualification Card.

It is the responsibility of the qualifying individual to maintain current training status for all required training as specified below.

		Training Coordinator Signature	Date
1.	General Employee Training	_____	_____
2.	Radiological Worker II (RAD-201)	_____	_____
3.	Conduct of Shift Operations (OPS-115)	_____	_____
4.	Hazardous Waste Worker (HWW-101)	_____	_____
5.	Radioactive Source Control (CL-2.08)	_____	_____
6.	Contamination Monitoring Instrumentation (CL-2.17)	_____	_____

Trainee: Obtain and read the following material. Sign and date to verify that you have read and understand the material.

1. WP 12-5, WIPP Radiological Control Manual	_____	_____
2. WP 12-RL, WIPP Radiochemistry Procedures Manual	_____	_____
3. WP 12-HP3200, Radioactive Material Control	_____	_____
4. WP 12-HP3400, Contamination Control	_____	_____
5. WP 12-HP3600, Radiological Work Permits	_____	_____

ACKNOWLEDGMENT OF SUCCESSFUL COMPLETION OF BASIC CHEMISTRY FUNDAMENTALS ACADEMIC LESSONS:

BASIC CHEMISTRY FUNDAMENTALS		**INSTRUCTOR SIGNATURE**	**DATE COMPLETED**
CF-1.02	Atomic Theory		
CF-1.03	Intro to Chemical Concepts		
CF-1.04	Periodic Table		
CF-1.05	Mole Concept		
CF-1.06	Writing Formulas		
CF-1.07	Chemical Reactions		
CF-1.08	Acid/Base Laws		
CF-1.09	Gas Laws		
CF-1.10	Significant Figures		
CF-1.11	Solutions		
CF-1.12	Chemical Equilibrium		
CF-1.13	Data Quality/Statistics		
CF-1.14	Physical Separation		

ACKNOWLEDGMENT OF SUCCESSFUL COMPLETION OF LABORATORY SKILLS FUNDAMENTALS LESSONS:

LABORATORY SKILLS FUNDAMENTALS		**INSTRUCTOR SIGNATURE**	**DATE COMPLETED**
CF-2.01	Solution Calculations		
CF-2.02	Volumetric Devices		
CF-2.03	Mass Measurement		
CF-2.04	pH Meters		
CF-2.05	Contamination Controls		
CF-2.06	Pressure/Vacuum Systems		
CF-2.07	Solvent Extractions		
CF-2.08	Spectroscopy		
CF-2.09	Laboratory Safety		

ACKNOWLEDGMENT OF SUCCESSFUL COMPLETION OF RADIOCHEMISTRY FUNDAMENTALS ACADEMIC LESSONS:

RADIOCHEMISTRY FUNDAMENTALS		**INSTRUCTOR SIGNATURE**	**DATE COMPLETED**
CF-4.01	General Nuclear Concepts		
CF-4.02	The Chart of the Nuclides		
CF-4.03	Induced Nuclear Reactions		
CF-4.04	Interactions of Radiation with Matter		
CF-4.05	Nuclear Stability and Radioactivity		
CF-4.06	Intro to Radiochemistry		
CF-4.07	Tracers and Carriers		
CF-4.08	Sample Preparation Techniques		
CF-4.09	Transuranic Samples		
CF-4.10	Fission Product Samples		
CF-4.12	Sample Counting Preparation Techniques		

COMPLETION OF JOB PERFORMANCE MEASURES:

P, S D	TASK NUMBER	TASK	EVALUATOR SIGNATURE	DATE
		DUTY AREA: ADMINISTRATIVE		
P	TRC-A04	Maintain Radiochemistry Laboratory Logbook		
P	TRC-A06	Maintain Radiochemistry Laboratory Equipment		
P, SD	TRC-A09	Respond to Laboratory Off-Normal Events		
P	TRC-A12	Manage Samples		
P	TRC-A13	Control Radioactive Sources		
P	TRC-A14	Operate a Portable Alpha Contamination Detection Instrument		
P	TRC-A15	Operate a Portable Beta Contamination Detection Instrument		
		DUTY AREA: LABORATORY SKILLS		
P	TRC-F01	Prepare Reagents		
P	TRC-F02	Perform Sample Dissolution		
P	TRC-F03	Perform Sample Precipitation		
P	TRC-F04	Prepare a Resin Column		
P	TRC-F05	Prepare a Sample Filtration Apparatus		
		DUTY AREA: SAMPLE PREPARATION		
P	TRC-G01	Prepare a Liquid Sample		
P	TRC-G02	Prepare a Solid Sample		
P	TRC-G03	Perform Elemental Separation of Transuranic Products		
P	TRC-G04	Perform Elemental Separation of Fission Products		
		DUTY AREA: COUNTING PREPARATION		
P	TRC-H01	Prepare a Sample for Counting Using Electrodeposition		
P	TRC-H02	Prepare a Sample for Counting Using Coprecipitation		
P	TRC-H03	Prepare a Sample for Counting By Direct Planchet Mounting		
P	TRC-H04	Prepare a Strontium Sample for Counting		

NOTE: EACH JPM EVALUATOR INVOLVED IN THE TRAINEE VALIDATION OF THIS QUALIFICATION CARD SHALL PRINT AND SIGN THEIR NAME ON THE FOLLOWING BLANKS:

Evaluator: _____
print name signature date

Evaluator: _____
print name signature date

Evaluator: _____
print name signature date

Evaluator: _____
print name signature date

I have read the reference material pertaining to the Radiochemistry Technician training program and understand my responsibilities as a Radiochemistry Technician. I have performed the required job performance measures and can presently perform radiochemistry activities.

_____ _____
Radiochemistry Technician Date

ORAL BOARD EXAMINATION

The signature below certifies that the candidate has satisfactorily completed an Oral Qualification Examination Board for Radiochemistry Technicians.

_____ _____
Radiochemistry Board Chairperson Date

Approved to perform Radiochemistry duties without direct supervision

_____ _____ _____ _____
Cognizant Manager Date ES&H Manager Date